

ABSTRACT OF THE DISCLOSURE

A method of forming a bottle-shaped or other contoured metal container by subjecting a hollow metal preform having a closed end to internal fluid pressure to cause the preform to expand against the wall of a die cavity defining the desired shape, and advancing a punch by means of a backing ram into the die cavity to displace and deform the closed end of the preform either before or after expansion begins but before it is complete. The pressure-subjecting step is performed by simultaneously subjecting the preform in the die cavity to independently controllable internal and external positive fluid pressures and varying the difference between them to control strain rate. Apparatus for performing the method includes a split die with plural split inserts disposed in tandem to define the die cavity wall and heaters respectively inserted within the preform and arranged to heat the backing ram.

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